In the Claims:

Please amend the claims as follows:

~~Claims~~

What is claimed is:

1. (Currently Amended) ~~Apparatus or arrangement~~ An apparatus with a heat source ~~(1) consisting for example of~~ comprising at least one electric or electronic component ~~or comprising one such component~~, with a heat sink ~~(2)~~ and with an intermediate layer ~~(3)~~ made of a thermally conductive material provided between the heat source and the heat sink, ~~characterized in that~~ wherein the intermediate layer ~~(3)~~ consists of an organic matrix with embedded nanofibers, the length of at least a majority of the nanofibers embedded in the organic matrix is between 1-100µm and ~~that~~ wherein the heat source ~~(1)~~ and the heat sink ~~(2)~~ bear with thermally conductive surfaces ~~(1.1, 2.1)~~ against the intermediate layer ~~(3)~~ with a surface pressure between approximately 0.1 and 100 bar.

2. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 1, ~~characterized in that~~ wherein the organic matrix, at least at the operating temperature of the apparatus or of the heat source ~~(1)~~, is in a viscous or liquid state, ~~for example~~ or a semi-liquid state.

3. (Currently Amended) ~~Apparatus~~ The apparatus according to claim ~~1 or~~ 2, ~~characterized in that~~ wherein the organic matrix is already in the viscous or liquid state at ~~room temperature, i.e. at~~ a temperature between 10 and 30°C.

4. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 2, ~~characterized in that~~ wherein the organic matrix is in the viscous or liquid state at a temperature higher than 30°C, ~~for example~~ or at a temperature between 40 and 80°C.

5. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the organic matrix contains at least one oil, ~~for example~~ such as a synthetic oil, ~~such as~~ or a silicone oil.

6. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the organic matrix contains at least partially an elastomer, ~~for example~~ such as a completely or only partially cross-linked elastomer, ~~e.g.~~ or a synthetic elastomer ~~such as~~ , or silicone rubber.

7. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the organic matrix is at least partially a polymer, ~~e.g.~~ a polycarbonate, a polypropylene or a polyethylene.

8. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the percentage of nanofibers in the matrix is between 1 and 70 percent by weight in relation to the total mass of the intermediate layer ~~(3), preferably between 5 and 20 percent by weight~~.

9. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the nanofibers have a thickness between approximately 1.3 nm and 300 nm, where the length/thickness ratio of a majority of the nanofibers embedded in the organic matrix is greater than 10.

10. (Cancelled)

11. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the thickness of the intermediate layer ~~(3)~~ is between 0.01 mm and 0.5 mm.

12. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein at least part of the nanofibers are made of carbon, boron nitride, or tungsten carbide.

13. (Cancelled)

14. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the nanofibers ~~(8)~~ in the organic matrix are oriented in a random and/or tangled configuration.

15. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the nanofibers ~~(8)~~ in the organic matrix at least for the most part are oriented in the same direction longitudinally, ~~for example~~ perpendicular or crosswise to the adjacent heat transfer surfaces ~~(1.1, 2.1)~~ or parallel or approximately parallel to the heat transfer surfaces ~~(1.1, 2.1)~~.

16. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 15, ~~characterized by~~ further comprising means ~~(9)~~ for orienting and/or maintaining the orientation of the nanofibers in the organic matrix, ~~for example~~ by means for creating an electric field intensity in the organic matrix.

17. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein at least part of the nanofibers embedded in the

organic matrix form a two-dimensional or three-dimensional structure, in which the nanofibers are linked with each other, ~~for example~~ in the form of a web or web-like structure, a non-woven material structure and/or a network or screen-like structure.

18. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the organic matrix contains further components or additives, ~~for example~~ in a percentage that is lower than the percentage of nanofibers.

19. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 18, ~~characterized in that~~ wherein the organic matrix contains at least one thermally conductive ceramic in the form of fine particles or powder as an additive, ~~for example~~ selected from Al_2O_3, AlN, BN, Si_3N_4, SiC, BeO, ZrO.

20. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 18 ~~or 19, characterized in that~~, wherein the organic matrix contains as an additive at least one metal and/or metal compound and/or metal alloy in the form of fine particles or powder, ~~for example~~ selected from silver, copper or gold.

21. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the claims 18 - 20, characterized in that~~ claim 18, wherein the matrix contains as an additive, in the form of fine particles or powder, at least one material and/or material compound and/or alloy that is heat-conductive and changes to molten state at temperatures above 50°C.

22. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1,

wherein at least part of the nanofibers are nanotubes, for example single-walled and/or double-walled nanotubes.

23. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein at least part of the nanofibers are coated with at least one metal.

24. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the nanofibers made of carbon are such nanofibers that were subjected to a heat treatment or graphitization step at a temperature between 2700 - 3100°C before being embedded in the organic matrix.

25. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the heat source ~~(1)~~ is formed by at least one electronic component, ~~e.g.~~ such as diode, semiconductor switch or control element ~~(transistor, mosfet)~~ , a transistor, a mosfet or by an integrated component.

26. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the heat source ~~(1)~~ is formed by at least one circuit or module with at least one electric or electronic component ~~(24)~~, which is located on a metal-ceramic substrate ~~(22)~~ manufactured using the DCB process or active soldering process, wherein the intermediate layer ~~(3)~~ is located between one metallization ~~(22.3)~~ of the substrate and one heat transfer surface ~~(2.1)~~ adjacent to said metallization.

27. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1,

wherein the heat source ~~(1)~~ is formed by a microprocessor, at least one laser diode or one laser diode bar.

28. (Cancelled)

29. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the heat sink ~~(2)~~ is formed by a passive cooler ~~(10)~~ with cooling fins, cooling pins or similar structures.

30. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the heat sink ~~(2)~~ comprises at least one active cooler ~~(12)~~ through which a coolant~~, for example water,~~ circulates.

31. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 30, ~~characterized in that~~ the at least one cooler ~~(12)~~ is part of a coolant circulation system.

32. (Currently Amended) ~~Apparatus~~ The apparatus according to ~~one of the foregoing claims, characterized in that~~ claim 1, wherein the heat sink comprises at least one heat pipe ~~(17, 20)~~ and that the intermediate layer ~~(3)~~ is provided at least between the heat source ~~(1)~~ and one cooling surface formed by the heat pipe.

33. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 32, ~~characterized in that~~ wherein one cooler or heat exchanger ~~(18, 21)~~ is provided on the heat pipe, wherein ~~preferably~~ at least one intermediate layer is provided between the heat pipe and this heat exchanger or cooler.

34. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 32 ~~or 33, characterized in that~~, wherein the heat pipe ~~(17)~~ functions as a heat pump or heat spreader.

35. (Cancelled)

36. (Currently Amended) ~~Thermally~~ A thermally conductive mass~~, e.g. thermally conductive paste,~~ for forming an intermediate layer ~~(3)~~ between a heat source ~~(1)~~ and a heat sink ~~(2), characterized in that~~, wherein the mass consists of an organic matrix with embedded nanofibers and the length of at least for a majority of the nanofibers embedded in the organic matrix is between 1-100 µm.

37. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to claim 36, ~~characterized in that~~ wherein the organic matrix, at least at the operating temperature of the apparatus or of the heat source ~~(1)~~, is in a viscous or liquid state, ~~for example~~ or a semi-liquid state.

38. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to claim 36~~ or 37, characterized in that~~, wherein the organic matrix is already in the viscous or liquid state ~~at room temperature, i.e.~~ at a temperature between 10 and 30°C.

39. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to claim ~~38, characterized in that~~ 36, wherein the organic matrix is in the viscous or liquid state at a temperature ~~higher than 30°C, for example at a temperature~~ between 40 and 80°C.

40. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the organic matrix contains at least

one oil, ~~for example~~ a synthetic oil, ~~such as~~ or a silicone oil.

41. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the organic matrix contains at least partially an elastomer, ~~for example~~ a completely or only partially cross-linked elastomer, ~~e.g.~~ a synthetic elastomer ~~such as~~ or a silicone rubber.

42. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the organic matrix is at least partially a polymer, ~~e.g.~~ selected from polycarbonate, polypropylene or polyethylene.

43. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the percentage of nanofibers in the matrix is between 1 and 70 percent by weight in relation to the total mass of the intermediate layer ~~(3), preferably between 5 and 20 percent by weight~~.

44. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the nanofibers have a thickness between approximately 1.3 nm and 300 nm, where the length/thickness ratio of a majority of the nanofibers embedded in the organic matrix is greater than 10.

45. (Cancelled)

46. (Currently Amended) ~~Thermally~~ The thermally conductive mass ~~according to one of the foregoing claims, characterized in~~

~~that~~ claim 36, wherein the thickness of the intermediate layer ~~(3)~~ is between 0.01 mm and 0.5 mm.

47. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein at least part of the nanofibers are made of carbon, boron nitride and/or tungsten carbide.

48. (Cancelled)

49. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the nanofibers ~~(8)~~ in the organic matrix are oriented in a random and/or tangled configuration.

50. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the nanofibers ~~(8)~~ in the organic matrix at least for the most part are oriented in the same direction longitudinally, ~~for example~~ perpendicular or crosswise to the adjacent heat transfer surfaces ~~(1.1, 2.1)~~ or parallel or approximately parallel to the heat transfer surfaces ~~(1.1, 2.1)~~.

51. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein at least part of the nanofibers embedded in the organic matrix form a two-dimensional or three-dimensional structure, in which the nanofibers are linked with each other, ~~for example~~ in the form of a web or web-like structure, a non-woven material structure and/or a network or screen-like structure.

52. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the organic matrix contains further components or additives, ~~for example~~ in a percentage that is lower than the percentage of nanofibers.

53. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to claim 52, ~~characterized in that~~ wherein the organic matrix contains as an additive at least one thermally conductive ceramic in the form of fine particles or powder, ~~for example~~ selected from Al_2O_3, AlN, BN, Si_3N_4, SiC, BeO, ZrO.

54. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to claim 52 ~~or 53, characterized in that,~~ wherein the organic matrix contains as an additive at least one metal and/or metal compound and/or metal alloy in the form of fine particles or powder, ~~for example~~ such as silver, copper or gold.

55. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the claims 52 – 54, characterized in that~~ claim 52, wherein the matrix contains as an additive, in the form of fine particles or powder, at least one material and/or material compound and/or alloy that is heat-conductive and changes to molten state at temperatures above 50°C.

56. (Currently Amended) ~~Thermally~~ The thermally conductive mass ~~according to one of the foregoing claims, characterized in that~~ claim 36, wherein at least part of the nanofibers are nanotubes, ~~for example~~ single-walled and/or double-walled nanotubes.

57. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein at least part of the nanofibers are coated with at least one metal.

58. (Currently Amended) ~~Thermally~~ The thermally conductive mass according to ~~one of the foregoing claims, characterized in that~~ claim 36, wherein the nanofibers made of carbon are such nanofibers that were subjected to a heat treatment or graphitization step at a temperature between 2700 - 3100°C before being embedded in the organic matrix.